

Claims

1. A developer cartridge, comprising:
a body member configured to store a developer, the body member defining first and second open ends;
a first flange member disposed in the first open end;
a second flange member disposed in the second open end; and
a rim comprising an extension of a periphery, the rim configured to open and to close a shutter of an image forming apparatus.
2. The developer cartridge according to claim 1, wherein the rim comprises first and second faces disposed on opposite ends of an extended portion, the first and second faces configured to open and to close the shutter.
3. The developer cartridge according to claim 2, wherein the first face is configured to open the shutter, and the second face is configured to close the shutter.
4. The developer cartridge according to claim 2, wherein the rim is disposed on one of the first and second flange members.
5. The developer cartridge according to claim 4, wherein the rim comprises an extension of an outer circumference of the one of the first and second flange members.
6. The developer cartridge according to claim 5, wherein the rim encompasses an arc of at least about 180 degrees.
7. The developer cartridge according to claim 6, wherein the rim encompasses the arc of about 245 degrees.
8. The developer cartridge according to claim 7, wherein the rim extends from the one of the first and second flange members along an axis of the body member, the first and second faces are disposed perpendicular to the axis of the body member, and

the rim has one of a constant thickness and a variable thickness along the arc and first and second faces extending toward an axis of the body member.

9. The developer cartridge according to claim 8, wherein the rim is disposed on the second flange member.

10. The developer cartridge according to claim 9, further comprising:

a cap member, wherein the cap member is disposed in a receiving void of the second flange member, the receiving void configured to receive a developer from a bulk developer source.

11. The developer cartridge according to claim 10, wherein the cap member is non-removably retained in the second flange member.

12. The developer cartridge according to claim 11, wherein at least one of the cap member and the second flange member comprises locking tabs to retain the cap member in the second flange member.

13. The developer cartridge according to claim 11, wherein at least one of the cap member and the second flange member comprises a plurality of locking tabs to retain the cap member in the second flange member.

14. The developer cartridge according to claim 13, wherein a sidewall of the receiving void comprises at least two locking tabs to retain the cap member in the second flange member.

15. The developer cartridge according to claim 14, further comprising:

a stirring member configured to stir a developer stored in the body member.

16. The developer cartridge according to claim 1, further comprising:

a handle member disposed in one of the first and second flange members, the handle member configured to be extended and retracted along an axis of the body member.

17. The developer cartridge according to claim 16, wherein the handle member is disposed in a handle member receiving opening in the one of the first and second flange members.

18. The developer cartridge according to claim 17, wherein the handle member comprises a handle member stop configured to prevent removal of the handle member from the one of the first and second flange members without deformation of the handle member and the one of the first and second flange members.

19. The developer cartridge according to claim 17, wherein the handle member comprises two handle member stops configured to prevent removal of the handle member from the one of the first and second flange members without deformation of the handle member and the one of the first and second flange members.

20. The developer cartridge according to claim 19, wherein the handle member is disposed in the first flange member, and the first flange member comprises a recessed portion configured to facilitate one of extension and retraction of the handle member.

21. A method of replenishing a developer supply in an image forming apparatus with a developer cartridge including a rim including an extension of a periphery, the rim adapted to open and close a shutter of the image forming apparatus, the method comprising:

inserting the developer cartridge into the image forming apparatus; and

rotating the developer cartridge in a first direction such that the rim contacts a first portion of the shutter.

22. The method according to claim 21, wherein the developer cartridge is rotated in the first direction such that the rim opens the shutter.

23. The method according to claim 22, further comprising:

rotating the developer cartridge in a second direction such that rim contacts a second portion of the shutter.

24. The method according to claim 23, wherein the developer cartridge is rotated in the second direction such that the rim closes the shutter.

25. The method according to claim 24, wherein the second direction is opposite to the first direction.

26. The method according to claim 25, wherein the second portion of the shutter is disposed away from the first portion of the shutter.

27. The method according to claim 26, further comprising:

removing the developer cartridge from the image forming apparatus.